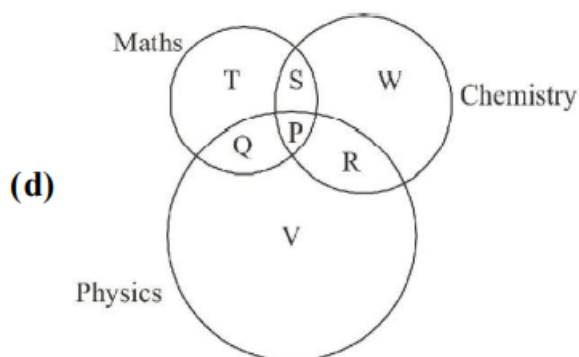Que3:

In a class of 140 students numbered 1 to 140, all even numbered students opted Mathematics course, those whose number is divisible by 3 opted Physics course and those whose number is divisible by 5

opted Chemistry course. Then the number of students who did not opt for any of the three courses is:

(a) 102
(b) 42
(c) 1
(d) 38

Ans:

(d)

$P = \{30, 60, 90, 120\}$

$\Rightarrow$ $n(P) = 4$

$Q = \{6n: n \in N, 1 \le n \le 23\} - P$

$\Rightarrow$ $n(Q) = 19$

$R = \{15n: n \in N, 1 \le n \le 9\} - P$

$\Rightarrow$ $n(R) = 5$

$S = \{10n: n \in N, 1 \le n \le 14\} - P$

$\Rightarrow$ $n(S) = 10$

$n(T) = 70 - n(P) - n(Q) - n(S) = 70 - 33 = 37$

$n(V) = 46 - n(P) - n(Q) - n(R) = 46 - 28 = 18$

$n(W) = 28 - n(P) - n(R) - n(S) = 28 - 19 = 9$

$\Rightarrow$ Number of required students

$= 140 - (4 + 19 + 5 + 10 + 37 + 18 + 9)$

$= 140 - 102 = 38$